Assessing Program Execution

Performance Assessments and Root Cause Analyses

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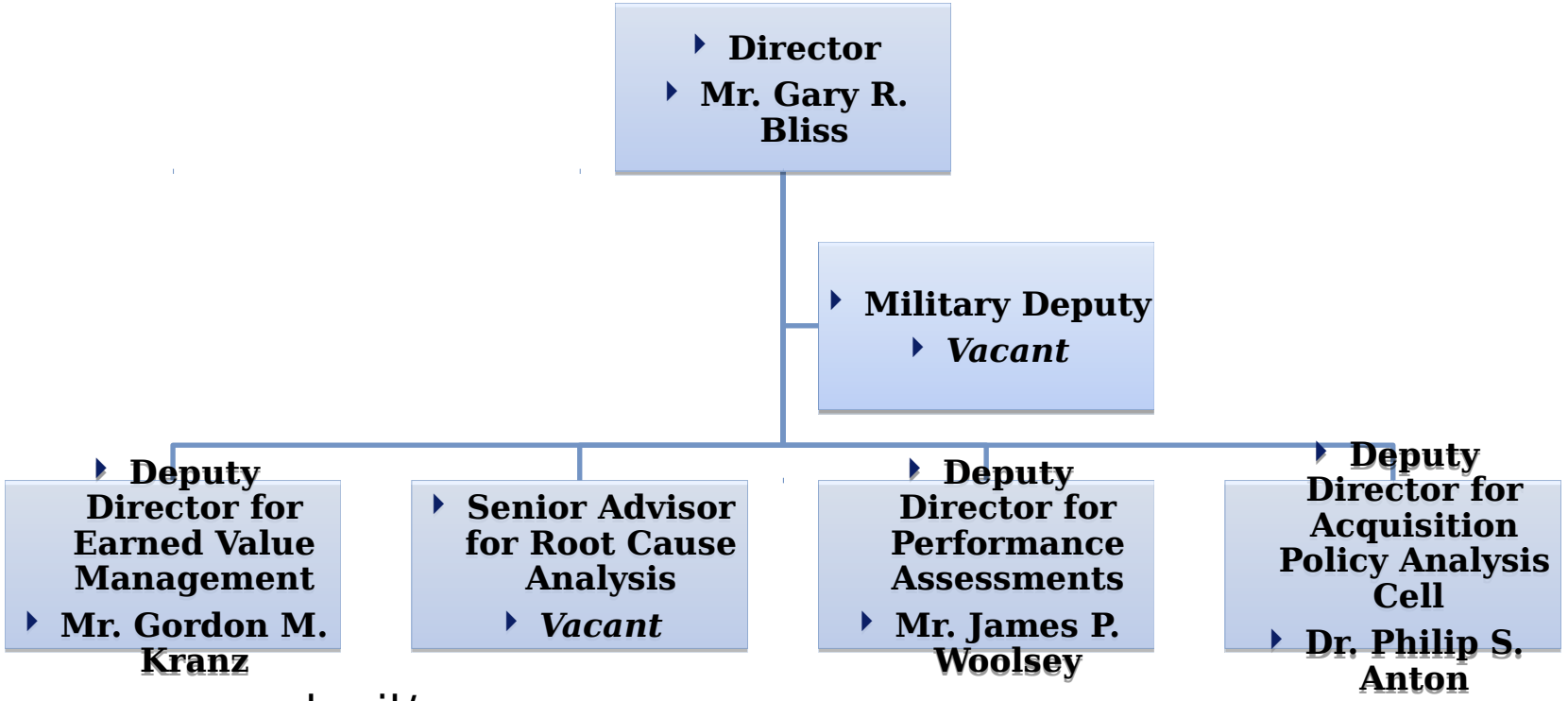
Performance Assessments and Root Cause Analyses (PARCA)

- PARCA was created by the 2009 Weapons System Acquisition Reform Act (WSARA)
- Stood up in January 2010



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PARCA Performance Assessments – WSARA's Assignments

1. Carry out performance assessments of MDAPs
2. Issue policies procedures and guidance on the conduct of performance assessments
3. Evaluate the utility of performance metrics used to measure cost, schedule and performance
4. Advise acquisition officials on performance of programs that have been certified after Nunn-McCurdy breach, or are entering full rate production, or are requesting multi-year procurement

Improve visibility into the execution status of MDAPs

Event-Driven Assessments

- Performance assessments following Nunn-McCurdy: Apache Block 3 (x2), ATIRCM-CMWS (x2), DDG1000 (x3), Excalibur, F-35 (x3), RMS (x2), WGS, Global Hawk
- Advice on multiyear, full rate decisions, other: SSN 774, C-5 RERP, C-27J, UH-60M, AMRAAM, CH-47, V-22, DDG-51, F/A-18E/F/G, SSN-774
- Assessments:
  - Track progress on root causes
  - Establish and follow performance metrics
  - Comment on overall program prospects
- Also participated in JSF quick look report

Continuous Performance Assessments

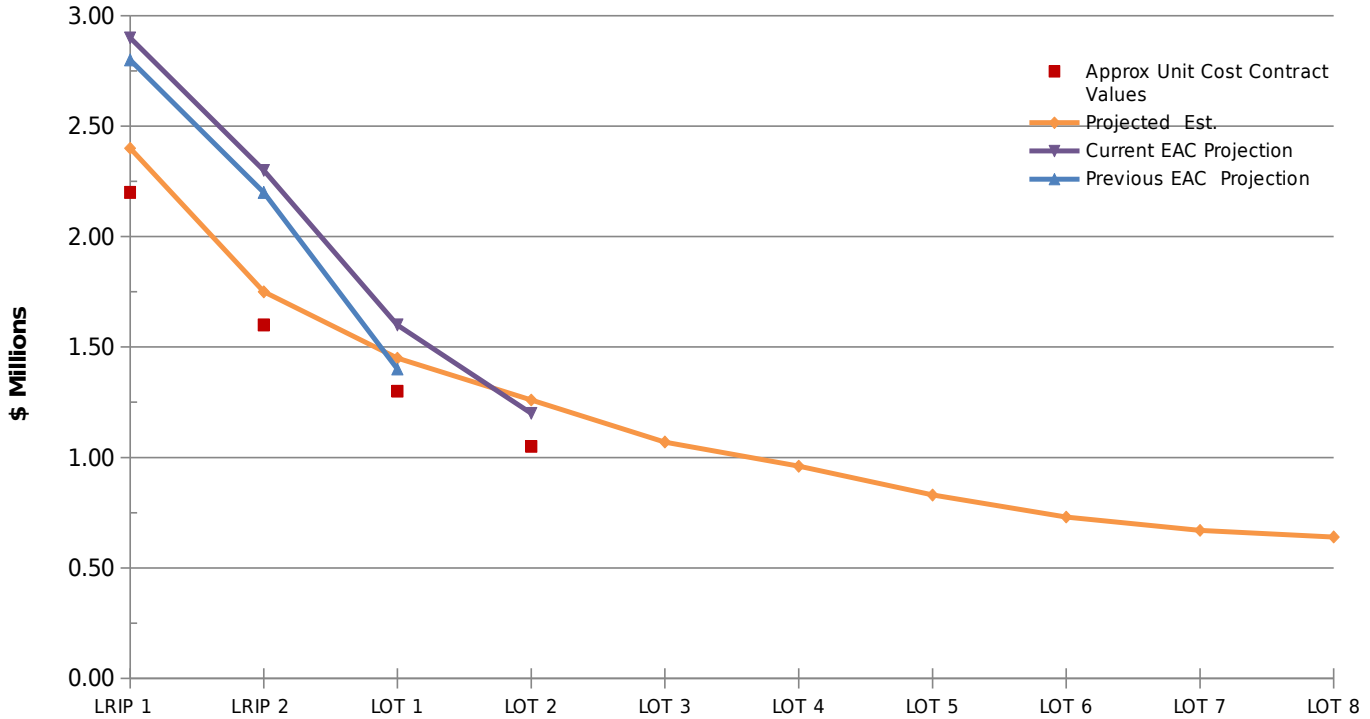
- Assessments are performed through the DAES process
  - Surveillance: Information gathered from PMs and OSD offices
  - Executive insight: Information presented to decision-makers
- PARCA:
  - Integrates assessments from other offices
  - Recommends programs for DAES briefings
  - Identifies important issues for discussion
- PARCA also does independent analyses, such as:
  - Identification of a failing EV system
  - Early identification of significant cost growth
  - Illustration of LRIP cost implications
  - Description of reliability status

PARCA Vision for Assessing Program Execution

- Sharpen assessment tools and invent new ones
  - Data-driven analyses of current programs
  - Clear and concise communication to leadership
- Improve how we gather what we know
  - The DAES process
- Change the way we think about programs
  - Framing assumptions

Using Earned Value to Show Implications of LRIP Costs

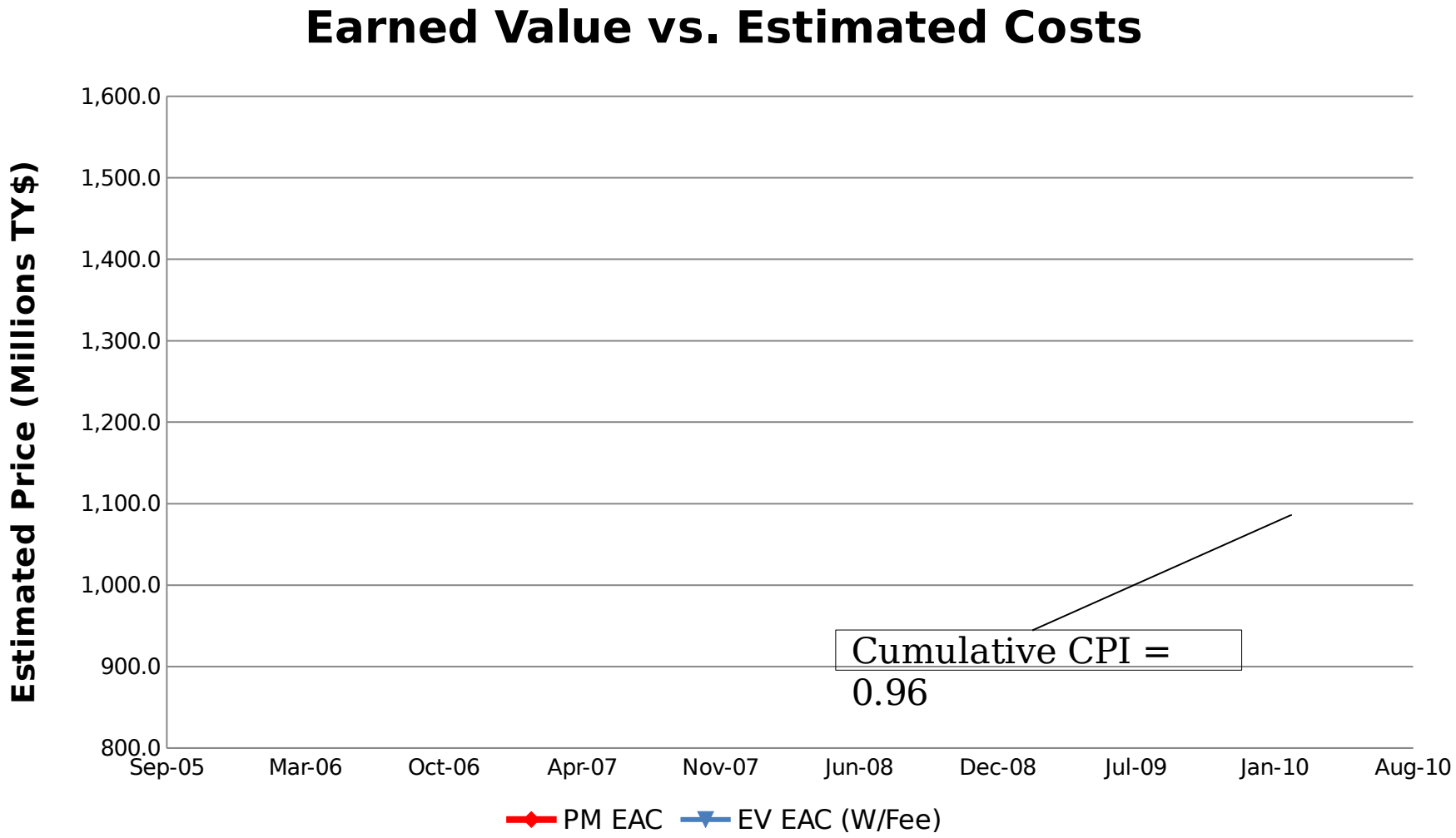
Notional Data - Sample Missile Program
Estimated Average URF Price by Lot



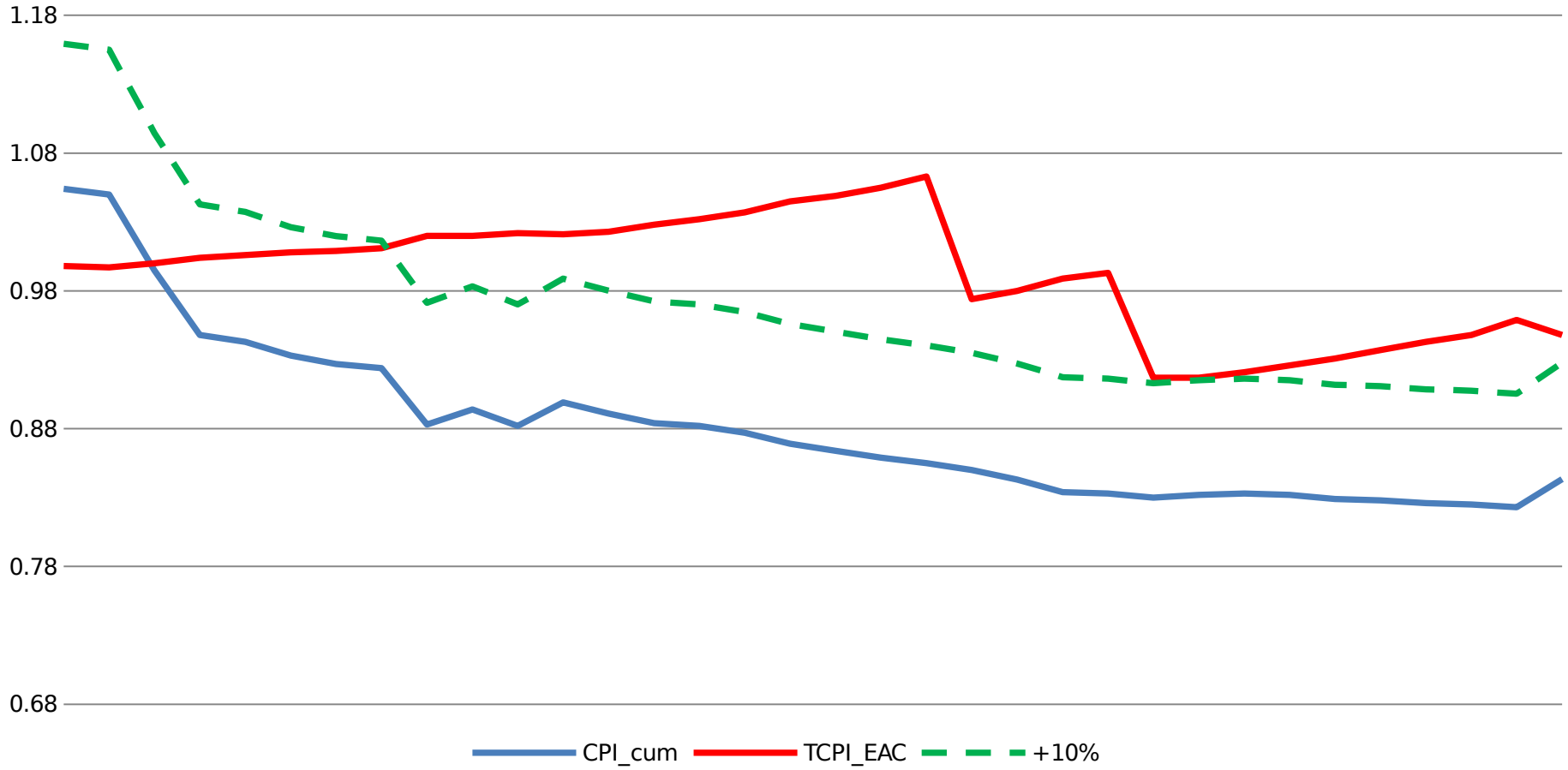
	LRIP 1	LRIP 2	LOT 1	LOT 2	LOT 3	LOT 4	LOT 5	LOT 6	LOT 7	LOT 8
Contract Type	CPAF	CPAF	FPIF	FPIF	FFP	FFP	FFP	FFP	FFP	FFP
Quantity	2	12	17	32	42	53	104	157	207	
Contract % Complete	100%	100%	60%	20%						

EAC projection based on
CUM Current Period CPR

A Failing EV System



Earned Value and Cost Realism



Assessing Reliability and Availability

- Problem:
  - KPP is usually availability (Ao)
  - We measure reliability (MTBF)
  - The connection between the two is not always clear
- Another problem:
  - Reliability is complicated
- And it's important
  - Reliability and Ao drive support costs and CONOPS
- PARCA has had some success clarifying these issues on several programs
  - More to follow

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  - **The DAES process**
- Change the way we think about programs
  - Framing assumptions

Gathering What We Know – The DAES Process

- As the senior acquisition executive, USD(AT&L) must maintain situational awareness on all MDAPs
- DAES is a unique mechanism for doing so:
  - It is continuous (not event-driven)
  - It is broad-based
  - It includes independent viewpoints
  - It is data-driven (or should be)

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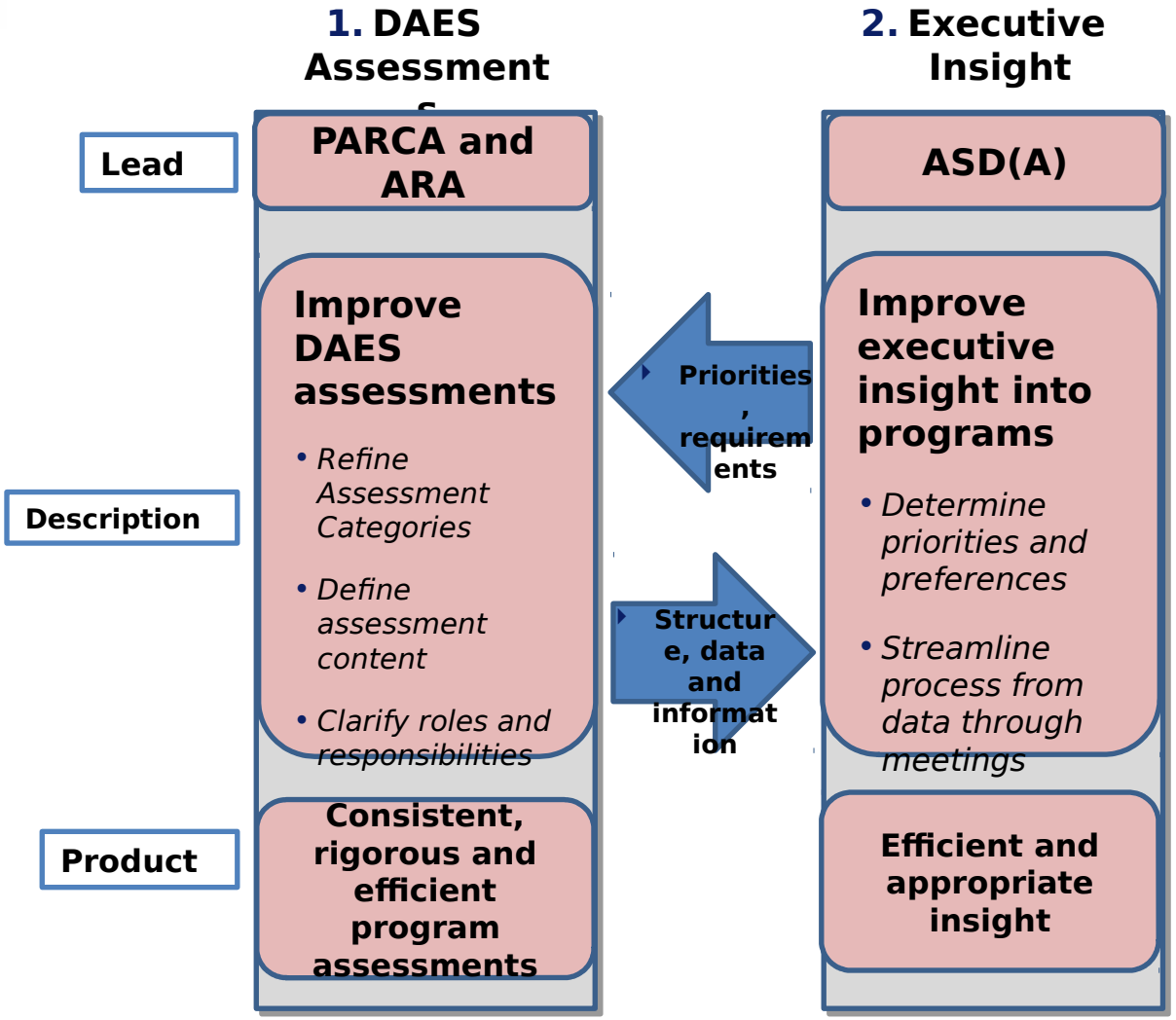
Two Parts of DAES Improvement



Improving DAES Assessments

- PARCA is one of several players improving the DAES process
  - Mr. Kendall's interest and direction has been critical
  - Dr. Spruill has implemented and reinforced Kendall direction
  - Mrs. McFarland is improving the process for executive insight
- PARCA roles:
  - **Update assessment guidance (with ARA)**
    - *Will include analysis concepts and best practices*
    - *Input from OIPTs, SAEs and functional offices*
    - *Will incorporate Better Buying Power initiatives*

Assessment Categories

- Current
  - Cost
  - Schedule
  - Performance
  - Contracts
  - Management
  - Funding
  - Test
  - Sustainment
  - Interoperability
  - Production
- Proposed
  - *Program Cost**
  - *Program Schedule**
  - Performance
  - *Contract Performance**
  - *Management**
  - Funding
  - Test
  - Sustainment
  - Interoperability
  - Production
  - International Program Aspects (IPA)**

* New or re-structured ** Added before PARCA/ARA work

What is being assessed?

What should I consider?

- Performance / Execution
  - To-Date
  - Projected
- Impact / Risk

What tools could I use?

Metrics for Schedule Performance

- Block Diagrams: By April 6
- Draft Guidance: By May 4
- Guidance Coordination: May 11
- Approval: By May 25

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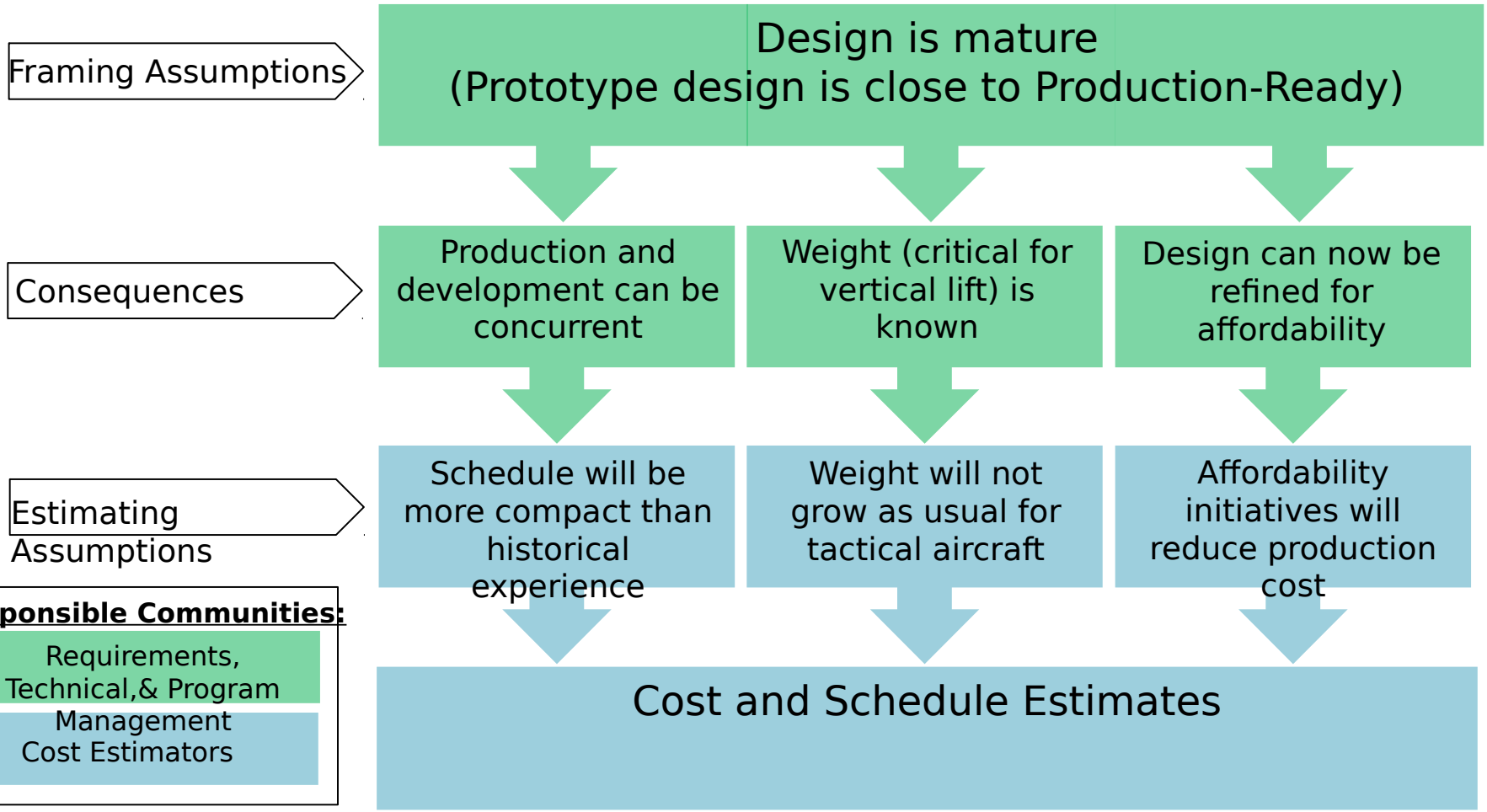
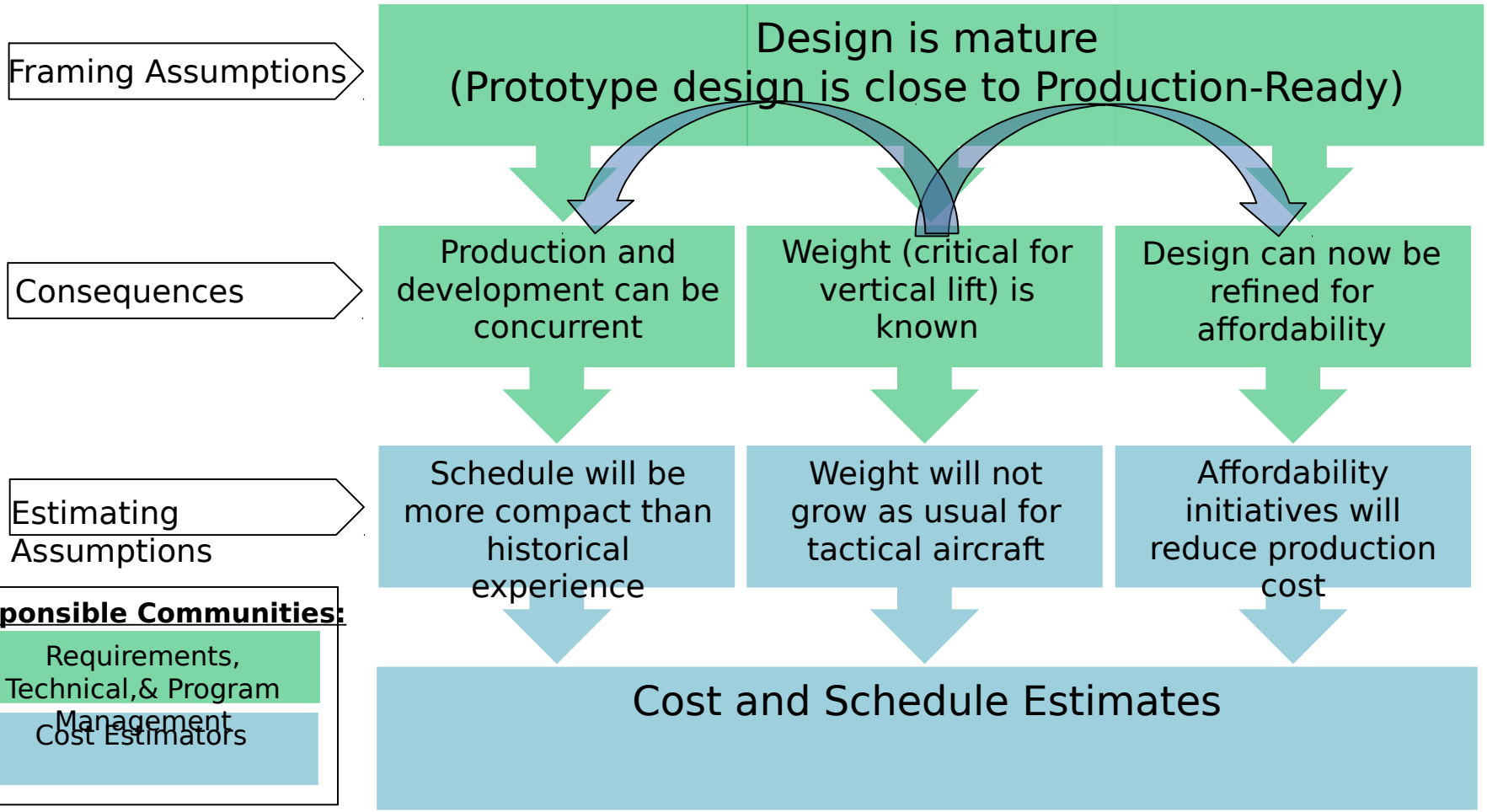
- **Change the way we think about programs**
  - **Framing assumptions**

Estimating Assumptions Flow from Framing Assumptions


Framing Assumptions
Design is mature
(Prototype design is close to Production-Ready)
Consequences
Production and development can be concurrent
Weight (critical for vertical lift) is known
Design can now be refined for affordability
Estimating Assumptions
Schedule will be more compact than historical experience
Weight will not grow as usual for tactical aircraft
Affordability initiatives will reduce production cost
Responsible Communities:
Requirements, Technical,& Program Management
Cost Estimators
Cost and Schedule Estimates

Correlation When Framing Assumption is Invalid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Illustrative Framing Assumptions

Pre-MS B activities: The design is very similar to the ACTD.

Technical base: Modular construction will result in significant cost savings.

Policy implementation: The conditions are met for a firm, fixed price contract.

Organizational: Arbitrating multi-Service requirements will be straightforward.

Program dependencies: FCS will facilitate solution of size, weight, and power issues. Interoperability

Threat or operational needs: The need for precision strike of urban targets will not decline.

Industrial base/market: The satellite bus will have substantial commercial market for the duration of program.

Program now

Program future

Program Environmen t

Framing Assumptions and Decision-Making

- Intent is to raise the key issues for the program irrespective of whether they are controversial
  - **First step:** Identify the right issues and know how they contribute to program success.
  - **Second step:** Establish what metrics are relevant to the issue's contribution to program success.
  - **Third step:** Present the data to date for and against, including relevant historical programs that are capable of discriminating outcomes.
  - **Fourth step:** Generate baseline forecasts of how the data will evolve if the thesis is correct . . . And vice versa. Track data and report.

- Concept will be piloted this year

Summary

- **Sharpen tools and invent new ones**
  - Ongoing and never-ending
- **Improve how we gather what we already know**
  - New DAES assessment process this summer
- **Change the way we think about programs**
  - Framing assumptions piloted this year